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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,616	09/08/2000	HIROKATSU MIYATA	35.C14776	2679

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EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/657,616

Applicant(s)

MIYATA, HIROKATSU

Examiner

Hai Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/17/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-48 and 51-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-48, and 51-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The art rejections over Kuroda et al (US 6,846,546) in view of Kubo et al (US 5,262,515) or Mishina et al (US 5,350,539) are withdrawn in view of Applicant's statement disclosed at page 6 of the 05/09/2005 amendment wherein the subject matter of Kuroda '546 and of the claimed invention were at the time the invention was made owned by the same person.
2. The art rejections over Ozin et al (US 6,027,666) in view of Kato et al (US 5,571,579) or Mishina et al (US 5,350,539) are maintained.
3. The double patenting rejections are maintained until the submission of the terminal disclaimer.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 44-48 and 52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,846,546 in view of Kato et al (US 5,571,579) substantially as set forth in the 02/07/2005 Office Action.

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6. Claim 51 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,846,546 in view of Kato et al (US 5,571,579) as applied to claim 44 above, further in view of Ozin et al (US 6,027,666) substantially as set forth in the 02/07/2005 Office Action.
7. Claim 53 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,846,564 in view of Mishina et al (US 5,350,539) substantially as set forth in the 02/07/2005 Office Action.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
9. Claims 44-48, 51, 52 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozin et al (US 6,027,666) in view of Kato et al (US 5,571,579) substantially as set forth in the 02/07/2005 Office Action.
10. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozin et al (US 6,027,666) in view of Mishina et al (US 5,350,539) substantially as set forth in the 02/07/2005 Office Action.

Response to Arguments

11. The double patenting rejections have been maintained for the following reasons.

Applicant argues that neither Kuroda nor Kato teaches or suggests the degree of orientation of the tubular pores. The examiner disagrees. Kuroda teaches the tubular mesopores are aligned uniaxially wherein the longitudinal axis of the mesopore extends along a surface of the polymeric film. That is exactly the same orientation of the tubular pores disclosed in the present invention. Therefore, it is not seen that the mesopores of Kuroda could have shown a different X-ray diffraction with respect to the dependency of the (110) plane diffraction intensity on the in-plane rotation angle. Accordingly, the Gaussian profile with a half width distribution of orientation of direction would be inherently present.

12. The art rejections over Ozin in view of Kato or Mishina have been maintained for the following reasons. Applicant argues that neither cited reference teaches or suggests the need for the methylene groups and their effect on orientation combined with a rubbing treatment. The examiner disagrees. Ozin discloses a mesostructured material for use in optoelectronics having a film of tubular mesopores formed on a high density polyethylene (HDPE) substrate (column 5, lines 59-64; column 9, lines 22-25). Ozin teaches the mesopores extending parallel to a major surface of the film (claim 24, column 8, lines 20-30). Likewise, the tubular pores are aligned uniaxially and extend alongside a boundary surface between the film and the substrate. Ozin discloses that the mesostructured material contains silicon (column 7, lines 25-27). Ozin discloses the

mesostructured material being formed by hydrolyzing a silicone alkoxide in the presence of surfactant (column 5, lines 26-34). Ozin does not specifically disclose the substrate containing an oriented polyimide which has a sequence of two or more adjacent methylene groups in a repeating unit of the main chain of the polyimide. Kato, however, teaches a liquid crystal device comprising a polyimide film on the glass substrate (column 20, lines 59-61). Kato teaches the polyimide film was subjected to surface rubbing treatment to form an alignment film. Kato discloses the polyimide having a sequence of two or more adjacent methylene groups in a repeating unit of the main chain of the polyimide (see formula (I)). Mishina teaches a liquid crystal device comprising a polyimide film on the glass substrate (example 1). Mishina teaches the polyimide film was subjected to surface rubbing treatment to form an alignment film (example 1). Mishina discloses the polyimide having a sequence of two or more adjacent methylene groups in a repeating unit of the side chain of the polyimide (claim 4). This is exactly what Applicant does to orient the polyimide film. Likewise, the polyimide film is substantially oriented. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an oriented polyimide film as the substrate of Ozin because the film stably exhibits high pretilt angle irrespective of curing temperatures and excellent heat resistance (the motivational statement taken from Kato). This is the need for the methylene groups and their effect on orientation. Applicant asserts that in comparative example 1 where a polymer thin film with no methylene groups in

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the repeating unit was subjected to the rubbing treatment, and the mesochannels were curved at their end portions, thereby providing inferior uniaxial orientation. The arguments are not found patentability because they are not commensurate in scope with the basis of the art rejections. The comparative example 1 demonstrates that the polymer thin film made from polyimide without methylene groups has inferior uniaxial orientation over the polymeric thin film formed from polyimide with methylene groups. The comparative example 1 fails to show the polymer thin film made from HDPE as disclosed in the Ozin invention having inferior uniaxial orientation over the polymeric thin film formed from polyimide having methylene groups. Therefore, the showing of comparative example 1 is not considered as unexpected results over the combined teachings of Ozin/ Kato or Ozin/Mishina and thus is not sufficient to overcome the art rejections. Further, in view of teachings of Kato, one skill in the art would be motivated to substitute the oriented polyimide film for the HDPE film because the oriented polyimide film stably exhibits high pretilt angle irrespective of curing temperatures and excellent heat resistance. It is believed that the motivation is strong and sufficient to establish the *prima facie* case of obviousness.

Ozin does not specifically teach that the tubular pores are oriented to be perpendicular to an in-plane rotation angle of 0° for the oriented polyimide wherein the tubular pores has a Gaussian profile with a half-width distribution of orientation of about 35° or less. However, Ozin discloses the mesopores comprising channels extending parallel to the film surface (claim 7, figure 1).

This is the same orientation of the tubular pores shown in figure 1 and page 27 of the present invention. Since the mesopores of Ozin and tubular pores of the present invention are oriented in a directed parallel to the film surface, it is not seen that the mesopores of Ozin could have shown a different X-ray diffraction with respect to the dependency of the (110) plane diffraction intensity on the in-plane rotation angle. Accordingly, the Gaussian profile with a half width distribution of orientation of direction would be inherently present.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

**HA VO
PRIMARY EXAMINER**